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ABSTRACT

A study examined the effects of conversational themes and attention-focusing strategies on conversational comprehension. The variables in the study were (1) the presentation of ambiguous versus unambiguous themes of conversations, (2) using personal versus content-oriented themes in conversations, and (3) presenting listeners with personal versus content attention-focusing strategies (asking participants to focus on a personality type versus focusing on the content of the message). The subjects were 247 college students who were divided into 16 groups that heard various combinations of the three variables and two stimulus messages. After the subjects received the attention-focusing strategy and theme statement appropriate to their experimental group, they listened to the stimulus conversation and completed recall accuracy and uncertainty reduction tests. The posttests were administered again one week following the experiment. The results demonstrated that unambiguous themes predicted conversational comprehensibility and recall accuracy. Type of theme also had a significant impact on these dependent measures as well as on uncertainty reduction. The results suggested that personal conversational information may be processed differently from content conversational information. (RL)

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Conversational processing: The effects of theme and attention-focusing strategy on comprehension, recall accuracy, and uncertainty reduction

by

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This literature review will focus on the potential usefulness of the concepts theme and attention focusing strategy in predicting how conversants comprehend, recall, and reduce uncertainty in processing conversational discourse. In examining theme, the present study will postulate the need to distinguish between ambiguous and unambiguous themes, as well as between personal and content themes. The personal-content distinction will also be used to conceptualize the attention focusing strategies conversants use in processing conversational discourse.

Theme

The term theme most often refers to the central idea, purpose, or gist of a message. It is in this sense that the term theme is used in this study. Thorndyke (1977) defines story theme, "The theme of the story is the general focus to which the subsequent plot adheres" (p. 80). Bixanz, La Porte, Vesdonder, and Voss (1978) define story theme similarly: "Theme may be defined as a concept or idea that serves to relate or unify large chunks of story information (C.F. Green, 1977),..." (p. 338). The terms theme, topic, and title are often used interchangeably to mean the same thing in discourse processing research (e.g., Bransford and Johnson, 1972; Bransford and McCarrell, 1974; Dooling and Lachman, 1971; Goss, in press; Kintsch and Van Dijk, 1978; Reichman, 1978, to name a few). Only those studies which define topic and title similarly to this study's definition of theme will be reported.

Themes help receivers make discourse coherent by providing an organizing criterion according to which discourse propositions are judged for semantic

relatedness to theme and hence, other discourse propositions. "The propositions of a text base must be connected relative to what is intuitively called a topic of discourse (or a topic of conversation), that is the theme of the discourse... There must be a global constraint that establishes a meaningful whole, characterized in terms of a discourse topic" (Kintsch and Van Dijk, 1978, pp. 365-366).

Theme Ambiguity

Themes vary in terms of how constraining they are in connecting discourse propositions. Unambiguous themes are more constraining than ambiguous themes, and therefore make discourse more coherent. In reading the following example, the relatively ambiguous thematic sentence fragment, "Instructions for performing a task," does not serve as a useful criterion or "global constraint" in helping the reader disambiguate the semantic relations between text propositions.

> The procedure is actually quite simple. First you arrange things into different groups. Of course one pile may be sufficient depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step, otherwise you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run this may not seem important but complications can easily arise. A mistake can be expensive as well. At first the whole procedure will seem complicated. Soon however, it will become just another facet of life. . . . (Bransford and McCarrell, 1974, p. 206).

However, the unambiguous thematic sentence fragment, "Instructions for washing clothes," is an excellent criterion or "global constraint" for specifying how text propositions should relate to each other, and succeeds

in helping the reader comprehend the text.

Comprehension

The above example indicates that to be useful in aiding comprehension themes must be unambiguous. Research into theme's effect on text comprehension (Bisanz et al., 1978; Bransford and Johnson, 1972; Bransford and McCarrell, 1974; Dooling and Lachman, 1971; Dooling and Mullett, 1973) supports this point. One problem with this research is that the stimulus passages used in these studies were so complex-abstract that they were virtually incomprehensible without an unambiguous theme (see Cofer's, 1977, p. 335, comments on this problem). Using these kinds of stimulus passages may explain why past theme researchers manipulated presence or absence of theme or themes location (i.e. before or after the passage) but not, in most cases degree of theme ambiguity. To partially replicate and extend this past theme research, the present study used conversational stimulus messages which were relatively comprehensible without a theme, making it possible to manipulate degree of theme ambiguity.

A further extension of past theme research was made possible by the use of conversations in this study instead of prose passages. Conversational messages are usually more complex than prose passages (Olson, 1977). This issue will be dealt with in more detail in the Content and Personal Themes section. Unambiguous themes probably serve the same role in conversational discouse processing that they do in text processing, but as yet no studies have examined this possibility.

There are several recent communication studies which indirectly bear on theme's role in conversational processing. Recent communication research

has demonstrated that providing an "appropriate" conversational theme (or topic)is a sign of communicative competence (Planalp and Tacey, 1980, p. 244), an obligation (Reichman, 1978, p. 14), a way to make conversations understandable (Goss, in press, p. 106), and a measure of conversational success (Grimes, 1981, p. 1). An unambiguous theme is the most likely candidate for an "appropriate" theme because it would make the sender's conversational message more comprehensible by disambiguating the semantic relations between conversational propositions. The present study will examine the effect that level of theme ambiguity has on conversational comprehensibility.

Recall

When processing conversations participants need to comprehend each others messages but they also must store and retrieve message information received from one another for future use in conversations. For example, remembering personal information about others'attitudes, values, idiosyncracies, etc. would allow an interactant to develop strategies for persuading another, and storing general world knowledge from conversations like information about sports, history, art, etc. would allow the interactant to expound on a given topic area. Themes serve as storage and retrieval cues for discourse information. Dodd and White (1980) summarize the role theme plays in discourse storage and retrieval:

> In general the theme of a passage (or sentence) is the focus of a memory representation, also suggesting the existence of a hierarchical organization to the memory for propositions, namely the presence of a higher level node (more accessible and more durable) for

> the theme. It has also been established that the recall of the theme will increase the likelihood of recall of ideas closely related to it (c.f. Bransford & Johnson, 1973; deVilliers, 1974). (p. 251)

Numerous studies have found thematic effects on discourse recall (Bock, 1980; Bransford and Johnson, 1972; Bransford and McCarrell, 1974; Dooling and Lachman, 1971; Dooling and Christiannsen, 1977; Dooling and Mullett, 1973; Revlin, Bromage, and Van Ness, 1981; Sulin and Dooling, 1974; Thorndyke, 1977). Few of these studies, however, examined the possibility that degree of theme ambiguity might influence recall. Dooling and Lachman (1971) appeared to have recognized this possibility, "we can at least say that the E-imposed theme produced a greater effect on recall than any S-imposed theme... It is reasonable to assume E's thematic title more accurately reflects the underlying semantic structure of the passage that was intentionally included when the passages were constructed" (p. 222). Dooling and Lachman (1971) only speculated that their themes disambiguated the stimulus texts better than ones their subjects might have generated. The effects of theme ambiguity on conversational comprehension and recall will be directly tested in the present study.

Uncertainty Reduction

The past research on theme's effect on discourse processing tells us how themes affect comprehension and recall, but conversational interactants do more than comprehend, store, and retrieve conversational information. They also use the information to make judgments about each other with the purpose of reducing uncertainty about each other (Berger, 1980; Berger and Calabrese, 1975; Berger and Clatterbuck, 1977; Berger, Gardener, Parks,

Schulman, and Miller, 1976. Berger and Perkins, 1978). Past theme research provides little guidance about how conversational themes may affect the reduction of uncertainty. This may be because the theme research reviewed exclusively used prose stimulus messages. A likely extension of the theme research to uncertainty reduction would suggest that conversational interactants who organize their conversations around unambiguous themes will be judged differently (e.g. as more competent) than those who organize their conversations around ambiguous themes, and this would be manifested in uncertainty reduction differences. A receiver who can readily comprehend, store, and recall conversational information because a sender uses unambiguous themes is likely to judge this sender as more competent as Grice's (1975) theorizing and Planalp and Tracy's (1980) research implied. This study will test the possibility that level of theme ambiguity affects undertainty reduction, and by doing so will extend theme and uncertainty reduction research.

Hypothesis 1 summarizes the predicted relationship between theme ambiguity and comprehension, recall, and uncertainty reduction.

Hypothesis 1: Receivers provided with unambiguous conversational themes will comprehend, recall, and reduce uncertainty significantly better than receivers provided with ambiguous conversational themes.

Content and Personal Themes

Conversations contain both content and personal information (Keenan, MacWhinney, and Mayhew, 1977; Olson, 1977). Keenan et al. (1977) categorized conversational statements as "high interactional" (or what this study labels personal) and "low interactional" (or what this study labels content) (p. 550).

High interactional (or personal) information is "information about the speaker's intentions, his beliefs, and his relations with the listener" and low interactional (or content) information is "information about objects and events in the world...essentially independent of personal knowledge of the speaker" (Keenan et al., 1977, p. 550).

This content-personal distinction has not been examined in previous theme research (Keenan et al., 1977, did not examine theme in their study). The reason this distinction was not made may be because the previous theme research used primarily prose or other non-conversational stimulus material which did not contain personal information. Olson (1977, pp 73-76) indicated that prose texts typically do not contain personal information, but conversations typically contain both content and personal information. So, researches using prose stimulii would not likely be as sensitive to the content-personal information distinction as researchers using conversational stimuli. It may be that the added complexity of conversational stimuli because of the content - personal distinction made theme researchers more inclined to use prose stimuli over conversational stimuli.

Given that a content-personal distinction exists for conversational information, it is necessary to also postulate content and personal themes. Each type of theme (content and personal) would serve as a coherence-organizing criterion for each type of conversational information respectively. Each type of theme would function to aid receivers in comprehending, storing, and recalling the content and personal information contained in conversations. This assertion is well documented for content themes based on the prose-theme research previously reviewed. The role of personal themes in conversational discourse processing is less well documented, as Schank and

Abelson (1977) pointed out.

Recent person perception research by Lingle, Geva, Ostrom, Leippe and Baumgardener (1979) and Ostrom, Lingle, Pryor, and Geva (1979) found that people develop personal themes to organize their impressions of others, to recall information about others, and to interpret others' actions. One drawback to this research in terms of the present study is that these researchers used trait descriptors rather than conversational stimuli. Their findings do indicate that the concept "personal theme" is a viable one, and a natural extension of their work would be to explore the role of personal themes in conversational processing.

Although little is known at present about the role of personal themes in conversational discourse processing, personal themes may serve as coherence-organizing criteria for personal information in much the same way that content themes do for content information. But personal information may be processed differently than content information. For example, Keenan et al. (1977) found that conversants' recall for personal information was significantly better than for content information. To augment conversational research on this issue the present study will ask the following research question:

> Research Question 1: How will type of conversational theme (i.e. content or personal) affect the comprehension, recall and reduction of uncertainty in conversational discourse processing?

Attention Focusing Strategies

Attention focusing strategies have a significant impact on the comprehensibility and recallability of information (Spiro, 1977; Cohen and Ebbesen, 1979; Frederiken, 1975). Conversants use strategies to aid them in reducing uncertainty about others by focusing their attention on

those aspects of a conversational message that will provide cues about senders' personalities (Berger, 1980).

Communicators use attention focusing strategies in processing conversational discourse to accomplish various communicative goals (Cohen and Ebbesen, 1979; Just and Carpenter 1977; Winograd, 1977). Two prominent goals receivers should have when processing conversational discourse are to comprehend and recall conversational information. For example, when a student is paying a sizable amount of money for a tennis lesson, he/she will probably tend to focus on the content information (e.g. how to hold the racket, proper forehand technique, etc.) and pay less attention to personal information (e.g. jokes, comments about how the student's taste in tennis apparel, etc.). In a different communicative situation, e.g. a romantic encounter, a receiver will most likely elect to focus attention on comprehending personal comments.

Cohen and Ebbesen (1979) found that receivers given a task attention focusing strategy (similar to content attention focusing strategy) were more accurate at recalling stimulus material (i.e. video tapes of actors performances on given tasks) than subjects given an impression formation focusing strategy (similar to personal attention focusing strategy). Spiro (1977) found that subjects given a "memorization" strategy were more accurate in recalling stimulus material (written description of a couple's marital problems) than subjects given a "clinical psychologist" strategy.

Noting the existence of content and personal goals, Kintsch (1977) stated "In a dialogue the interaction (personal information) with the other person might be much more salient than the content of the dialogue..." (p. 35). Making a similar distinction between content and personal strategies,

Winograd (1977) argued, "Many of the goals are at a metacommunicative level, dealing with the personal interaction between the speaker and hearer rather than the putative content of the utterances" (p. 69). Kintsch's (1977) and Winograd's (1977) speculation about the existence of content and personal goals which would guide receivers attention focusing activity is intuitively appealing, but as yet has not been empirically documented in conversational or text processing research. This study will examine the effects that content and personal attention focusing strategies have on conversational processing, and by doing so will empirically test the theoretical speculations of researchers on this issue.

Past research on attention focusing strategies indicates that interactants will better comprehend and recall those aspects of a message that they focus their attention on. A simple extension of these findings to the reception of conversational messages is expressed in the following hypothesis:

Hypothesis 2: Receivers who focus attention on personal message information will comprehend and recall personal message information significantly better than receivers who use a content attention focusing strategy, the converse being true for the comprehension and recall of content message information when receivers use a content attention focusing strategy.

Berger's (1975-1980) uncertainty reduction research indicated that receivers chose from a variety of strategies to reduce uncertainty about others. A

logical extension of Berger's work is that a personal focusing strategy would prove most useful in reducing uncertainty about others because personal information is more useful than content information in reducing uncertainty about others. The present study will examine this possibility.

Hypothesis 2a: Receivers who use a personal focusing strategy will reduce uncertainty more than receivers who use a content focusing strategy.

A general conclusion from previous research, then, is that theme ambiguity, theme type, and attention focusing strategies have significant independent effects on conversational discourse processing. The combined effects of these three variables has not been examined by past conversational discourse processing research. These independent variables may have additive or interactive effects, or may cancel out the effects of each other. To answer this question the present study will examine the combined effects of theme ambiguity, theme type, and attention focusing strategies within one factorial experimental design.

Methods

Design. A 2X2X2X2 between subjects factorial design was used with the independent variables theme ambiguity (ambiguous and unambiguous themes), theme type (content and personal), focusing strategies (content and personal), and conversation (ceramics and fencing lessons)[3], and the dependent variables content and personal conversational comprehension, content and personal delayed conversational recall accuracy, uncertainty reduction, and delayed uncertainty reduction. Although there are 90 possible main effects and interaction hypotheses in this design, for

he sake of brevity only the most promising research question and hypotheses were stated.

Operational Definitions

Independent Variables

Theme Ambiguity. The two levels of theme ambiguity were unambiguous and ambiguous. Two unambiguous and two ambiguous thematic instructions for each stimulus conversation were given to subjects in writing. For example, one of the unambiguous themes (for the fencing lesson) was "Harry gives Susan a fencing lesson stressing proper weapon grip and body positioning," and one of the ambiguous themes was "Harry and Susan are talking about skills necessary to successfully complete a task."

A validity check was performed to ensure that subjects generated similar or exactly the same themes as those provided by the experimenter, whether unambiguous or ambiguous. In every case, subjects given unambiguous themes generated themes which were rated as significantly ($p < .001$) less ambiguous than subjects given ambiguous thematic instructions. These ratings were provided by three judges with a reliability of .89 measured by Cronback's alpha.

Focusing strategy. The two kinds of focusing strategies given subjects were personal and content. Subjects in this study were instructed to implement either personal or content focusing strategies when receiving a stimulus conversation. Subjects given content focusing instructions were asked to pretend that they might have to relay the essential factual information of the conversation to someone else. These instructions also asked the subjects

to focus on content or informational statements and ignore all non-essential comments of a personal nature. Subjects given personal focusing instructions were asked to pretend that they overheard one of the stimulus conversations and would have to use it as a basis for deciding what kind of person the instructor was and what his personal feelings or intentions were toward his female student. They were also instructed to focus exclusively on personal statements while listening to the conversation. Again, all focusing instructions were given to subjects in writing.

As a validity check, subjects were asked to report the focusing strategy used once the initial phase of the experiment was completed. Subjects reported using a focusing strategy which was nearly identical to the strategy they were instructed to use, according to three raters (who were reliable at .95 via Cronback's alpha).

Theme type. A validity check was performed to ensure that subjects receiving content or personal thematic instructions would use the appropriate theme type. An example of a personal theme would be "Harry is the 'nit-picker' type", and a content theme would be "Harry and Susan are talking about the skills necessary to successfully complete a task." In every case, subjects given personal and content thematic instructions generated themes which three raters judged to be consistent with their condition of instruction. Reliability of judges was .95 via Cronback's alpha.

Conversation. The two stimulus conversations, each covering a different topic were fencing and ceramics instruction. In each conversation, a male (Harry) instructor gave a female student (Susan) a lesson. The conversations followed a typical instructor-student interaction pattern, with the instructor dominating the conversation by giving detailed instructions about half of

the time and making evaluative statements about the student's progress the other half with the student giving short replies primarily in the form of questions and acknowledgement of the instructor's suggestions. Both speakers had prior acting experience and the same actors were used for both conversations. The stimulus conversations lasted about two minutes and were presented on audio tape to control length of exposure for all subjects and to simulate the overhearing of a normal conversation.[4]

Dependent Variables

Comprehension. Both content and personal conversational comprehension were measured in this experiment. Following well established measurement techniques (Thorndyke, 1977), self-report scales for content and personal comprehensibility were used in this study. One reason for using self-report scales over other comprehension measures is that self-report scales do not cause subjects to decode information in an artificial manner. For example, using a comprehension test is likely to cause subjects to process information more deeply than they would in a normal conversation. Two 9 point interval scales (based on Thorndyke's, 1977, self-report comprehension scale) were used to measure content and personal conversational comprehension.

Recall accuracy. Following Sulin and Dooling's (1974, p. 258) advice to use free recall measures in discourse research on theme's effects, a non-cued free recall test was administered to subjects following a one week time delay between presentation of the stimulus conversations and the recall test.[5] Dooling and Mullet's (1973) scoring procedure was used in the present study, "because it is well known that Ss do not naturally recall stories verbatim, an attempt was made to assess the number of sentences recalled, where sentences were scored by a liberal criterion of reproducing

their general idea" (p. 405). Two judges scored subjects' recall for content and personal conversational propositions, yielding an overall recall accuracy score for content and personal information. Judges interrater reliability was by Pearson r =.86.

Uncertainty reduction. Clatterbuck's (1979) Uncertainty Reduction Evaluation Scales (CLUES scale) constituted the uncertainty reduction measure. Clatterbuck's scales were developed from a series of experiments and have high internal consistency (Cronbach's alpha = .87). Responses to the CLUES scales were averaged to yield an overall uncertainty reduction score for each subject. Subjects were tested immediately after hearing the stimulus messages and after a one week delay. The same CLUES scales were used for the immediate and delayed uncertainty reduction measure.

Subjects. Two hundred and forty-seven college students, 126 females and 121 males, randomly selected from beginning level communication and speech courses participated in the experiment. The subjects were participating as partial fulfillment for a class grade. Students were tested in groups ranging in size from 12 to 18 during regular class hours. The median age for subjects was 19.1 years.[6]

Procedures. The 247 subjects were randomly assigned to the 16 experimental conditions. (Some attrition occurred due to inadequate responses but, subjects were approximately equally distributed throughout experimental conditions with no condition having less than 14 or more than 16 subjects). Each condition group met separately in a classroom, where subjects were informed that they would be participating in an interpersonal communication experiment focusing on the instructional dyad. Subjects were asked not to converse with each other during the experiment. Subjects then received the attention focusing

instructions appropriate to their condition followed by the appropriate theme ambiguity statement. The experimenter played the appropriate recorded stimulus conversation once only. Subjects then responded to the comprehension scales and the uncertainty reduction test. Subjects were reminded to return at the same time in one week in order to be debriefed, to discuss the experimental results, and to obtain their general opinions about what constitutes successful dyadic communication.

When subjects returned after one week, the experimenter administered the recall accuracy and uncertainty reduction tests. The recall accuracy test was administered first, followed by the uncertainty reduction test. Finally, the experimenter debriefed the subjects.

Results and Discussion

Multivariate and univariate analysis of variance procedures were used. Where significant interactions were present, Tukey's HSD post-hoc (Kirk, 1968, pp. 88-90) comparisons were performed. The results for each dependent variable will be presented along with Tukey's comparisons where significant interactions were present. All significant interactions were graphed.

MANOVA Results

The rationale indicated that personal comprehension and uncertainty reduction should be closely related phenomena in conversational processing. A Pearson r correlation analysis (see Table 1) revealed this to be the case; suggesting the need to analyze the results on these dependent variables with the MANOVA procedure.

A 2x2x2x2 MANOVA with the personal comprehension, immediate and delayed uncertainty reduction measures revealed a significant theme ambiguity by conversation interaction, $F(3,213)=2.79$, $p < .04$, and a significant theme

type by conversation interaction, $F(3,213)=4.01$, $p < .009$. There were no other significant main or interactive effects, although the theme type effect approached significance, $F(3,213)=2.30$, $p < .077$.

A MANOVA was also performed for the content and personal recall accuracy measures since both measures are conceptually related, reflecting recall process. A 2x2x2x2 MANOVA with the content and personal recall accuracy measures revealed significant main effects for theme ambiguity, $F(2,222)=14.58$, $p < .0001$, theme type, $F(2,222)=9.40$, $p < .0001$, and conversation $F(2,222=6.75$, $p < .001$, and significant theme ambiguity by theme type $F(2,222)=7.22$, $p < .0009$, focusing strategy by conversation, $F(2,222)=3.10$, $p < .047$, and focusing strategy by theme ambiguity by theme type, by conversation, $F(2,222)=3.41$, $p < .035$, interactions.

Following Harris' (1975) and Evan's (1979) advice, as well as to simplify discussion of the results, univariate ANOVA'S and post hoc comparisons, where significant interactions were evident, were performed for each dependent measure. The univariate results very closely reflect the multivariate results.

Content Comprehension

There were significant main effects for theme ambiguity, $F(1,231)=25.22$, $p < .0001$ and theme type, $F(1,231)=11.39$, $p < .001$, and a significant theme ambiguity by theme type interaction $F(1,231)=5.387$, $p < .021$. As predicted, the mean content comprehension score for subjects receiving unambiguous themes ($\bar{X}=6.492$) was significantly higher ($p < .0001$) than for subjects receiving ambiguous thematic instructions ($\bar{X}=5.096$). Subjects receiving content thematic instructions comprehended content message information significantly ($p < .001$) better ($X=6.2443$), than subjects receiving personal thematic instructions ($\bar{X}=5.343$).

A Tukey's HSD post hoc test demonstrated that subjects receiving unambiguous content themes (X-7.27) comprehended content message information significantly ($p < .05$) better than subjects receiving unambiguous personal themes (X=5.7). Figure 1a indicates that theme type had an effect on content message comprehension only when the message theme was unambiguous. Looking at the interaction another way (Figure 1b), subjects receiving unambiguous content themes comprehended content message information significantly better ($p < .05$) than subjects receiving ambiguous content themes. There were no significant differences in the personal theme condition for content message comprehension.

There was a significant main effect for conversation, $F(1,231)=8.598$, $p < .004$. Subjects receiving the fencing instructions conversation comprehended its content information significantly better ($\bar{X}=6.19$) than subjects receiving the ceramics instruction conversation ($\bar{X}=5.397$).

The pattern of results for content comprehension conformed to predictions in the main. Conversations for which subjects received unambiguous content themes were significantly easier to comprehend. This is not surprising given the studies which have found essentially the same pattern of results using prose stimulii. The present study extended prose comprehension research involving theme effects by using conversational stimulus messages. One important and constraining aspect of this extension was the present study's introduction of a distinction between content and personal themes. This distinction proved significant, as the results for content comprehension revealed. Future content comprehension research which uses conversational stimulus messages must take into account the complexity of these messages by distinguishing between content and personal information. The use of

personal and content themes is one fruitful way to approach to this issue.

Personal Comprehension

On this dependent variable, there was a significant interaction between theme type and conversation, $F(1,230)=.14.523$, $p < .001$ (see Figure 2). In the ceramics conversation, theme type had a significant effect (Figure 2a); subjects receiving personal themes ($\bar{X}=7.40$) comprehended personal information significantly better than subjects receiving content thematic instructions ($\bar{X}=6.21$). By comparison Figure 2b demonstrates that subjects receiving content themes for the fencing message ($X=7.26$) comprehended personal information significantly ($p < .05$) better than subjects receiving content themes for the ceramics message ($\bar{X}=6.21$).

The results indicate that in some conversations a receiver will comprehend personal information better when they use a personal theme and in other conversations when they use a content theme. The experimenter provided personal theme may have been more useful in comprehending personal information in the ceramics conversation because subjects may have had poorly articulated personal schemata for arts-crafts instructors. Markus' (1977), Lingle et al.'s (1979), and Cantor and Mischel's (1979) research indicated that person schemata or prototypes differ in strength or degree of articulation in memory, and these differences affect a variety person perception-processes (e.g. recall, impression formation, speed of processing and uncertainty reduction, to name a few). If subjects had poorly articulated personal schemata for arts-crafts instructors because of limited prior knowledge of arts instructors, then the provided personal themes would have given them useful information that a poorly articulated schemata would not for disambiguating the ceramics instructor's personal comments. By the same token subjects receiving the fencing conversation may not have gained much from the provided personal themes because they already

has strongly articulated personal schemata for coaches or sports instructors, based on extensive prior knowledge about sports and sports coaches which they retrieved from memory and used as, a personal theme.

The fencing instructor's overall conversational behavior may have caused subjects to categorize him as a prototypic example of the coach-sports instructor personal schema. Thus subjects would probably be inclined to use this personal protype from memory as a theme for the fencing instructor's personal comments. "When a person is a prototypical category exemplar, then this association with the category can function as an organizational theme to structure the encoding of new information about the person..." (Cantor and Mischel, 1979, p.42). This may explain why there was no significant personal comprehension advantage for subjects in the fencing conversation condition receiving personal themes over subjects receiving content themes.

The personal comprehension advantage for subjects in the fencing conversation condition receiving content themes, may also be a result of personal prototypes. Given the possibility that fencing conversation subjects did not need personal themes to disambiguate the fencing instructor's comments, they may have found the content themes useful in further disambiguating the meaning of the entire conversation resulting in better overall comprehension and hence better personal comprehension than ceramics conversation subjects who received content themes.

These explanations are post-hoc and therefore subject to a multitude of alternative explanations put in footnote here on post-study. However, one thing these results indicate is that personal comprehension processes may be different than content comprehension processes. For one thing, regardless of the independent variables subjects found personal information ($\bar{X}$=6.902)

significantly more comprehensible than content information (x=5.797), $t(1,246)=5.85$, $p < .0001$. This may have created a sealing effect, partially washing out the effects of the independent variables. Future conversational research which focuses on personal comprehension may be able to determine why personal information is generally more comprehensible than content information in conversations, and also determine what role themes play in personal comprehension.

Initial Uncertainty Reduction

For this dependent variable there was a significant theme type by conversation interaction, $F(1,230)=7.525$, $p < .007$ paralleling the same interaction for personal comprehension. This interaction's graph (Figure 2) reveals its resemblance to the same personal comprehension interaction (Figure 2a). Subjects receiving personal themes in the ceramics instructions conversation reported significantly more uncertainty reduction than subjects receiving content themes for the same conversation.

There was also a significant three-way interaction among theme ambiguity, theme type, and conversation, $F(1,230)=5.77$, $p < .017$. Figure 4 shows that theme type had an effect in the ceramics instructions conversation in the unambiguous theme condition but not in the fencing instructions conversation.

Personal comprehension and uncertainty reduction appear to be the same, or similar aspects of the same reception process. Comments receivers categorized as personal would provide excellent clues about the sender's personality. To comprehend these comments the receiver must develop a disambiguating context, which in most cases would be a personal theme. This theme would in turn serve as an access route to a pertinent personal schema. The accessed person schema would provide the receiver with a set of criteria

for reducing uncertainty about the sender.

The implication from this study's results is that receivers may be more likely to access and use personal schemata when they are well articulated or strong, but not when they are poorly articulated or weak. An important issue for future research is the need to determine how personal memory schemata affect uncertainty reduction and personal comprehension when those schemata are strong or highly reinforced versus when they are weak or poorly articulated.

Delayed Uncertainty Reduction

There were no significant main effects or interaction for delayed uncertainty reduction. Time may diminish the independent variables' effect on uncertainty reduction. A t-test between the initial ($\bar{X}$=5.44) and delayed (X=5.11) uncertainty reduction measures revealed a significant decrease in uncertainty reduction after a time delay, $t(1,215)=5.85$, $p < .001$.

Lingle et al.'s (1979) research offers a likely explanation for the decrease in uncertainty reduction after time passes. Lingle et al. (1979) found that after time passes, receivers draw on thematically organized impressions from semantic memory to make judgements or reduce uncertainty about others. These impressions do not contain specific "stimulus traits" from original message information; they contain information related to personal themes developed during initial message reception (Lingle et al., 1979, p. 683). This being the case, it stands to reason that subjects in this study would experience decreases in uncertainty reduction over time because they did not have as many cues to reduce uncertainty as they did during initial message reception.

Content Recall Accuracy

There were significant main effects for theme ambiguity, $F(1,223) = 19.88$, $p < .001$, and theme type, $F(1,223)=13.38$, $p < .0003$, and significant theme ambiguity by theme type, $F(1,223)=10.72$, $p < .0012$, focusing strategy by conversation, $F(1,223)=5.38$, $p < .021$, and focusing strategy by theme ambiguity by theme type by conversation, $F(1,223)=5.69$, $p < .018$, interactions.

The results supported hypothesis 1, with content recall in the unambiguous theme condition ($\bar{x} = 1.403$) significantly better than recall in the ambiguous theme condition ($\bar{x} = .700$). Theme type had a significant effect on content recall, with those subjects receiving content themes recalling significantly more content information ($\bar{x} = 1.339$) than subjects receiving personal themes ($\bar{x} = .739$).

The theme ambiguity by theme type interaction (Figure 5) demonstrated superior content recall accuracy for subjects receiving the unambiguous content themes. The focusing strategy by conversation interaction, while significant in the ANOVA, revealed no significant differences via the Tukey's post-hoc test or the less conservative Duncan's multiple range test. The four way interaction graphs (Figure 6 a-d), demonstrated that the unambiguous content theme condition was the best predictor of recall accuracy regardless of focusing strategy or conversation.

These results taken as a whole clearly indicate that content recall accuracy is strongly constrained by the type of theme a receiver uses and the degree to which that theme disambiguates a conversation's content information. These results extend previous prose-theme recall research to the conversational arena. In studying theme's effect on conversational content recall accuracy, researchers must take into account this study's finding that while conversational

information is stored around themes and themes are used to retrieve conversational information; themes are more or less useful in storing and retrieving information based on the level to which they are ambiguous and what type of theme (content) is used.

Personal Recall Accuracy

There were significant main effects for theme ambiguity, $F(1,223)=13.09$, $p < .0004$, and conversation, $F(1,223)=12.53$, $p < .0005$. No other main or interactive effects were significant.

As predicted in hypothesis 1, subjects in the unambiguous theme condition accurately recalled significantly more personal information ($\bar{x} = .916$) than subjects in the ambiguous theme condition ($\bar{x} = .483$). Personal recall accuracy was significantly better for subjects receiving the fencing conversation ($\bar{x} = .900$) than those receiving the ceramics conversation ($\bar{x} = .496$).

Past research (Keenan et al., 1977) found that subjects could recall personal information more accurately than content information, indicating that these two types of information may not be processed in the same way. Degree of conversational theme ambiguity, however, appears to be an important predictor of both content and personal recall accuracy. Regardless of type of conversational theme or type of information recalled, using an unambiguous theme will significantly increase a conversant's recall accuracy.

As with personal comprehension and immediate uncertainty reduction, the conversation variable had a significant impact. Following the same line of reasoning, subjects receiving the fencing conversation may have been able to accurately recall personal information after a time delay because a "coach" personality prototype was a better organizing and retrieval cue for personal information than a "arts-crafts" personality prototype. Cantor and Mischel's

(1979) comments on this subject are particularly appropriate within the context of the present post-hoc explanation of the conversation effect. "When a target individual fits well in a particular category (or has been labeled as a member of that category) not only does memory for details of his/her behavior improve in general (e.g. Cantor and Mischel, 1980), but attributes commonly associated with that category are ascribed more freely to that person in written impressions and/or in recall-recognition protocals..." (p. 7).

Focusing Strategy

The predicted effects of focusing strategies did not occur. Previous research involving the focusing strategy variable found it to have a significant impact on message comprehension and recall. One important difference between the previous research and the present study was this study's use of conversational stimulus messages.

Perhaps in conversational messages, content and personal focusing strategies have minimal impact on comprehension, recall, and uncertainty reduction. Receivers may engage personal and content focusing strategies relatively automatically. Shatz's (1978) research indicated that content and personal focusing strategies are used interdependently not independently. "From a processing point of view, the two domains of understanding, social (personal) and message content (content) are not independent of one another. The facility with which one functions in one domain has repercussions for the display of knowledge in the other" (p. 5). It may be that while receivers can focus their attention on personal or content information they may be unable to disregard or minimally process the other type of information, especially when processing a coherent conversation.

It is also possible that receivers do not use personal or content focusing strategies when receiving conversational messages, although this seems somewhat unlikely given the past research (Keenan et al., 1977; Olson, 1977; Shatz, 1978) which indicates otherwise. Future research on the focusing strategies receivers use when processing conversational messages is needed to resolve these perplexing questions.

Conclusions

The results of this research provide a potentially fruitful new direction for the study of uncertainty reduction which appears to be intimately linked to personal message comprehension. Perhaps the most intriguing aspect of this research is its findings on the personal message comprehension and recall accuracy variables which suggests that personal semantic memory schemata are organized and accessed differently then content semantic memory schemata. Future research might focus on how receivers access and use personal schemata during conversational discourse processing. Perhaps the use of personal schemata in processing conversations involves the retrieval of a combination of personal schemata as well as bi-polar judgmental continuums as the constructivists' research indicates (see Delia and his colleagues research).

The results of this study also lead to the conclusion that it is useful to make the distinction between personal information and content information in conversations. Nonetheless, these two categories need further refinement. There are many types of personal and content information. For example, sarcasm, compliments, statements of attitudes, etc. all appear to fall within the personal information category. Interactants in conversations may treat these subcategories differently when reducing uncertainty about others.

The subcategories of content information (e.g. questions, assertions of fact, negation, statements of description, etc.) may also be treated differently in processing of conversations. Future research on this issue should attempt to identify those subcategories of content and personal information that are psychologically meaningful.

NOTES

1. See Berger, Douglas, and Rogers (1981); Goss (in press); Planalp and Hewes (1981); Planalp ard Tacey (1980); Craig (1979); Hopper (1981), Mike Rolofff (1981), to name a few.

2. See Bransford (1979), Fiske and Linville (in press), Freedle (1979), Hastie (1981), Lachman, Lachman, and Butterfield (1979), Spiro (1980), for more in depth reviews of modern schema theory, its assumptions, underpinings, and historical motivations.

3. In discourse processing research, most often researchers use at least two stimulus messages in order to increase the generalizability of their results and also to avoid the fixed effects fallacy (Clark, 1973). This variable's only purpose is to increase a study's generalizability, but more often than not the message variable produces significant effects. The message (or conversation) effect is very common in theme discourse research. Christiaansen (1980, p. 616), Dooling and Lachman (1971, p. 221), Dooling and Mullet (1973, p. 405), Dooling and Christiaansen (1977, p. 431), Sulin and Dooling (1974, p. 258 & 260), and Thorndyke (1977, p. 88) all reported a message effect. It is important to note that in all these studies Thorndyke (1977, pp. 97-98) was the only researcher who attempted to explain the message effect; his explanation was post-hoc and not relevant to the present study. So, while a conversation (or message) effect might have been predicted in this study, there was no basis in previous discourse research to substantiate and specify the direction of such a prediction. Rather than ignoring the conversation or message effect, I have incorporated

it within this study's experimental design and will attempt to offer some reasonable explanation, albeit post-hoc, for its occurance. In this way, future conversational research exploring the conversation effect will have some prior research basis for exploring the effect. Ultimately, we may reach a stage in discourse processing research where we will have a comprehensive explanation of the message-conversation effect. This will only occur when more comprehensive explanations are developed for discourse processes in general, however, until that time I believe we can expect message-conversation effects.

4. The author will furnish on request stimulus materials used in this study.

5. Dooling and Christiaansen's (1977) and Spiro's (1977) research indicated that a one week delay would be sufficient to permit constructive-reconstructive memory processes to occur. Spiro (1977) also indicated that informing subjects that they will be tested for recall will inhibit their constructive-reconstructive memory processes for a stimulus message, which was the reason for not informing subjects in this study that they would be given a recall test after the one week delay. This also was the rationale for not immediately testing recall accuracy, in addition to the fact that past memory research (Dooling and Christiaansen, 1977; Spiro, 1977) established that constructive-reconstructive intrusions would not be likely to occur in an immediate recall accuracy test.

6. For the validity check, 90 college students, 45 males and 45 females, were randomly selected from beginning level speech and communication classes. The mean age for subjects was 19.6 years.

7. In the analysis to be reported, several factors caused the degrees of freedom to vary somewhat for the different dependent variables. Seventeen subjects were absent for the second half of the experiment when the delayed uncertainty reduction and recall accuracy measures were administered. There were also six subjects who received the wrong recall accuracy test. The comprehension and initial uncertainty reduction scores for subjects who were absent for part or all of the delayed measures were included in the analysis for the initial measures. One subject was absent for the personal comprehension, initial uncertainty reduction measure and the delayed measure.

8. References about the "sociological level" and the "psychological level" were taken from Miller and Steinberg's (1975) developmental interpersonal communication theory.

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Table 1

Pearson r Between Dependent Variables

	Personal Comprehension	Uncertainty Reduction
Personal Comprehension		
Uncertainty Reduction	r = .511 (p < .0001)	
Delayed Uncertainty Reduction	r = .393 (p < .0001)	r = .742 (p < .0001)

Figure 1. Theme ambiguity by theme type interaction for content comprehension.

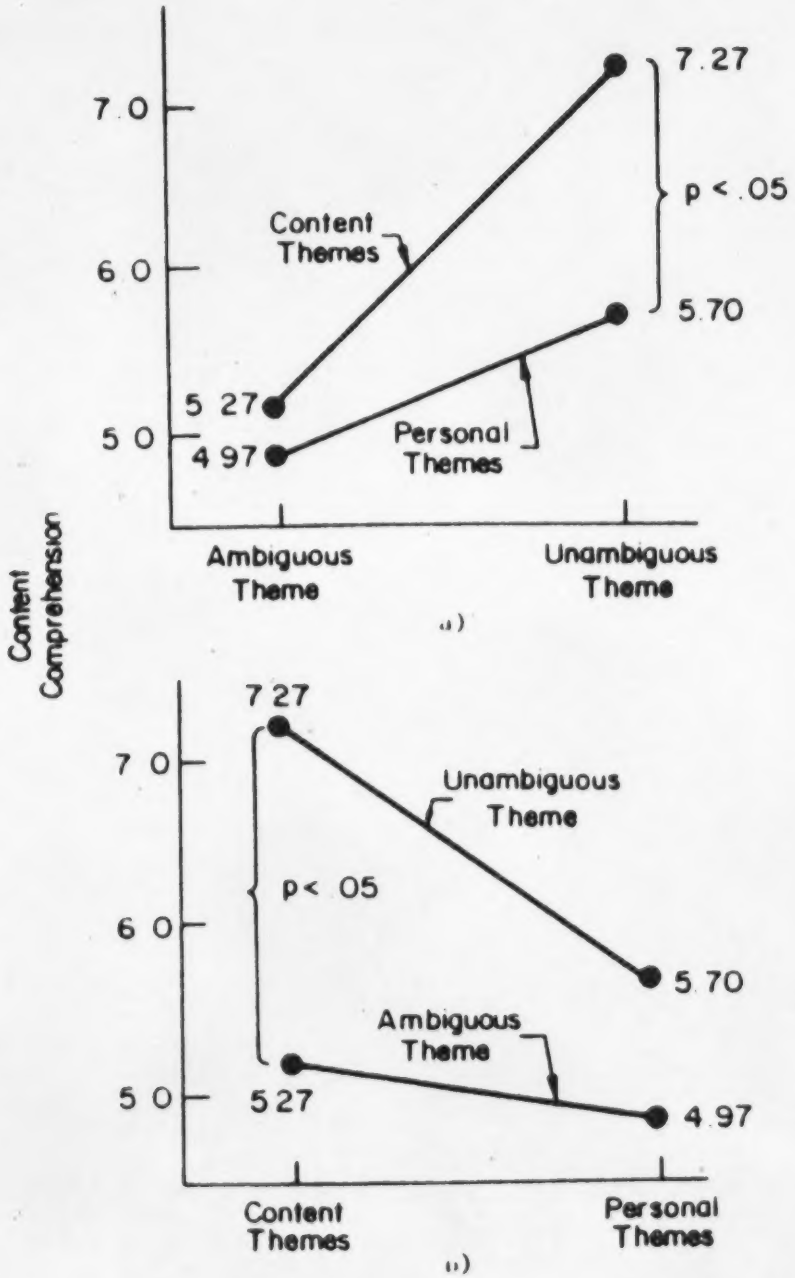

Figure 2. Theme type by conversation interaction for personal comprehension.

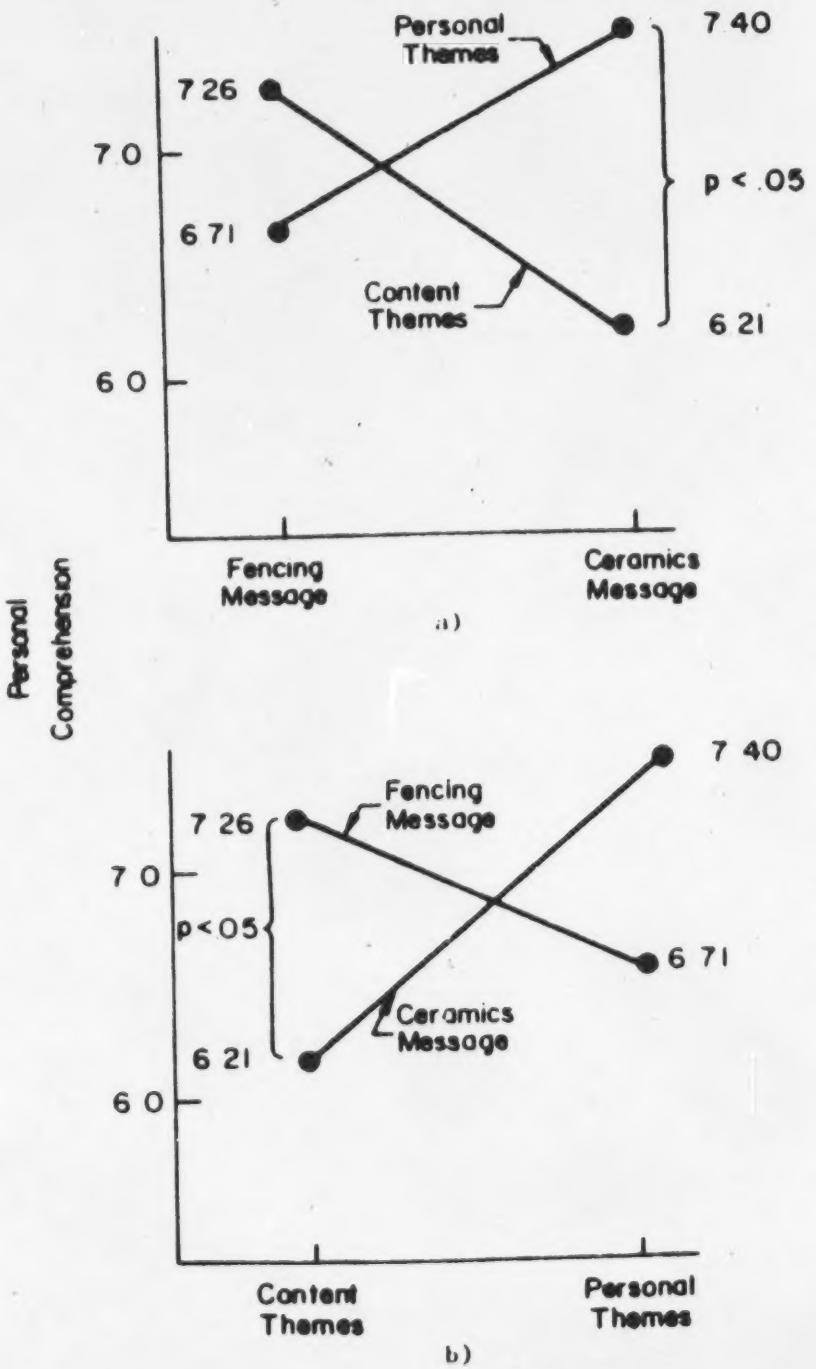

Figure 3. Theme type by conversation interaction for initial uncertainty reduction (N.S. = no significance).

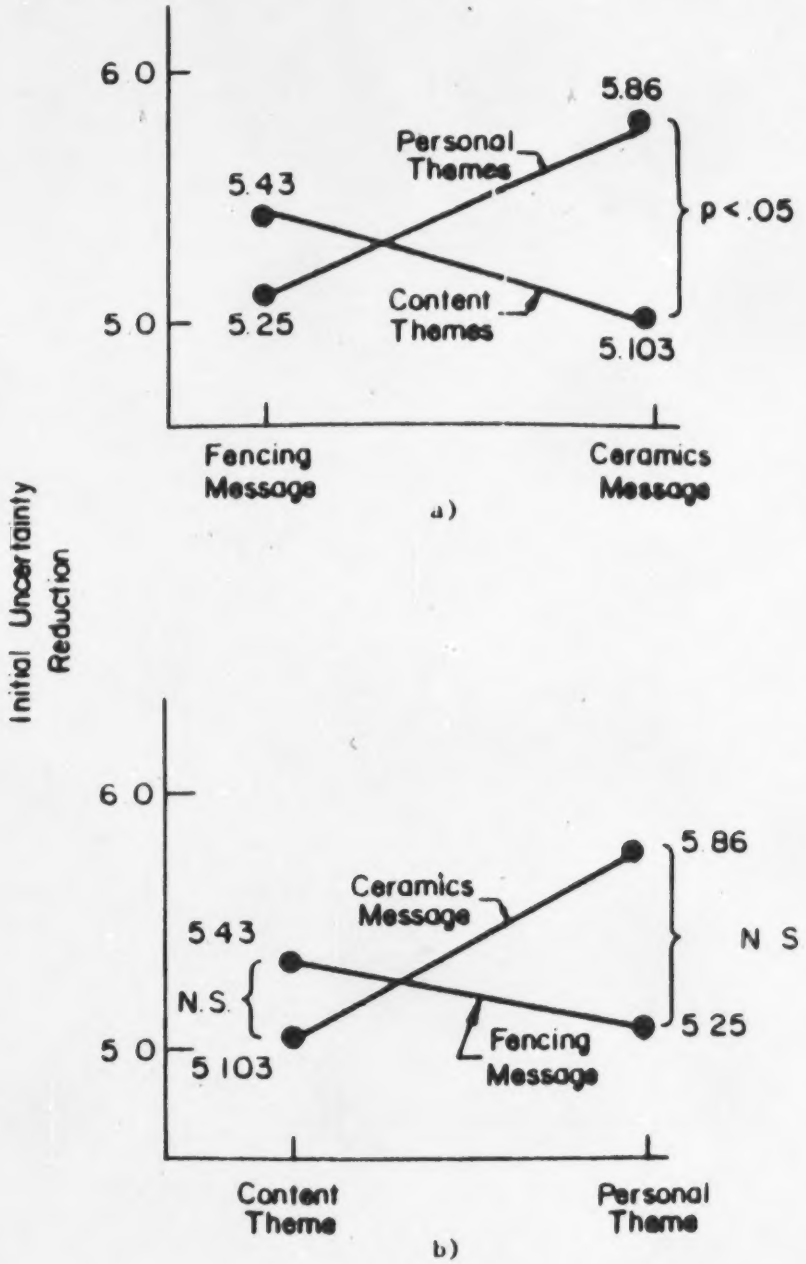

Figure 4. Theme ambiguity by theme type by conversation interaction for initial uncertainty reduction (N.S. = no significance).

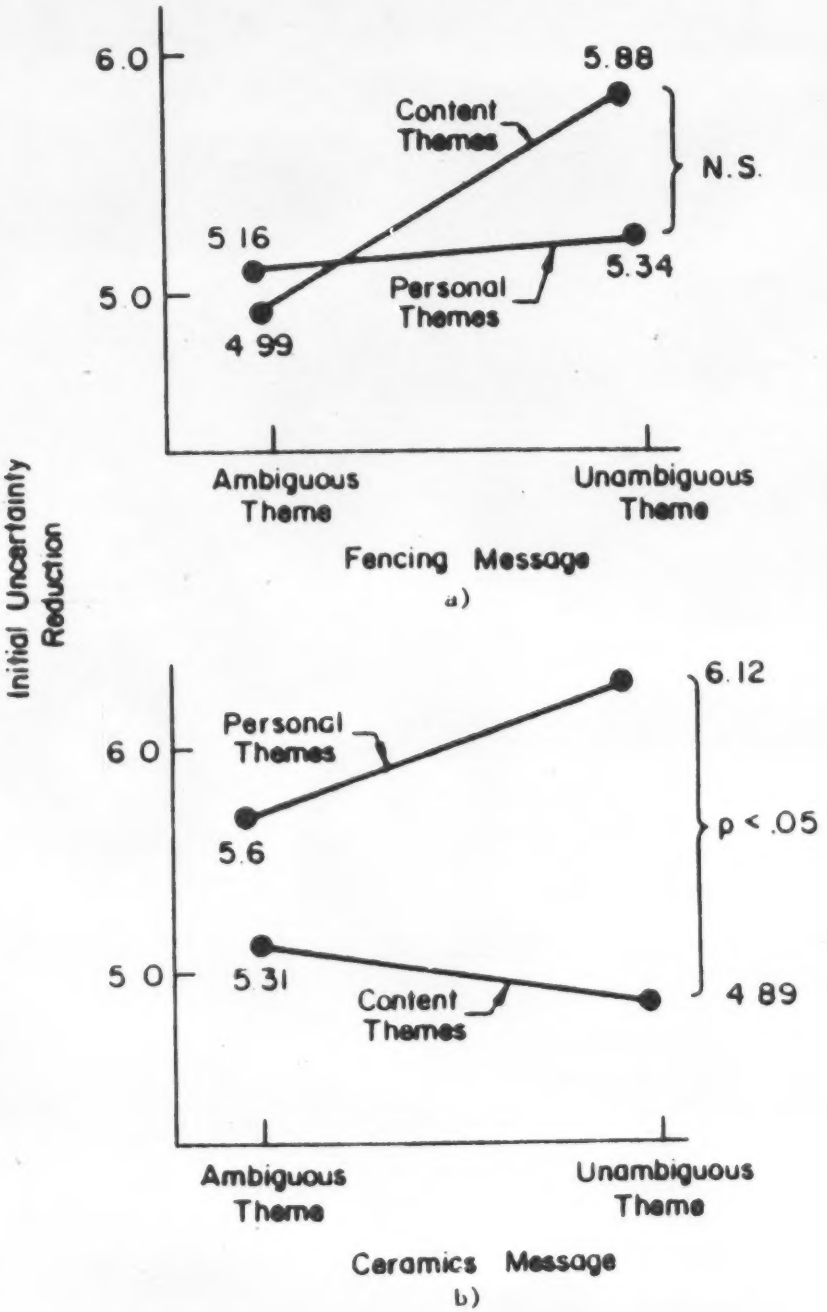

Figure 5. Theme ambiguity by theme type interaction for content recall accuracy

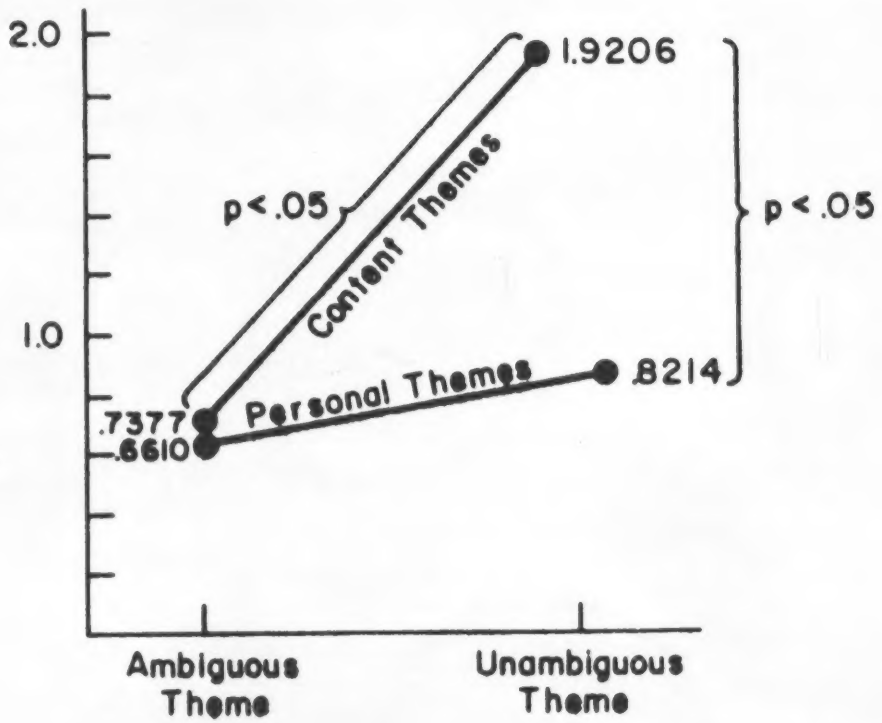

Figure 6. Focusing strategy by theme ambiguity by theme type by conversation interaction for content recall accuracy.